

=====

Sequence Listing could not be accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2008; month=8; day=1; hr=17; min=1; sec=20; ms=803; ]

=====

\*\*\*\*\*

Reviewer Comments:

<210> 1

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial Peptide Sequence

<210> 2

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial amino acid sequence

<210> 14

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

"Artificial Peptide Sequence", "Artificial amino acid sequence", and "Artificial nucleic acid sequence" are all insufficient responses for numeric identifier <223>. Please explain the source of the genetic material. If the sequence is put together from several organisms, please list those organisms. If the sequence is made in the laboratory, please

indicate that the sequence is synthesized. These errors appear in other sequences in the sequence listing. Please make all necessary changes.

\*\*\*\*\*

Application No: 09631613 Version No: 2.0

**Input Set:****Output Set:**

**Started:** 2008-06-27 14:14:17.279  
**Finished:** 2008-06-27 14:14:19.635  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 356 ms  
**Total Warnings:** 83  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 89  
**Actual SeqID Count:** 89

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
W 213	Artificial or Unknown found in <213> in SEQ ID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)

**Input Set:**

**Output Set:**

**Started:** 2008-06-27 14:14:17.279  
**Finished:** 2008-06-27 14:14:19.635  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 356 ms  
**Total Warnings:** 83  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 89  
**Actual SeqID Count:** 89

Error code

Error Description

This error has occurred more than 20 times, will not be displayed

W 402

Undefined organism found in <213> in SEQ ID (47)

# SEQUENCE LISTING

<110> Hogrefe, Holly  
Hansen, Connie J

<120> Polymerase Enhancing Factor (PEF) Extracts, PEF Protein  
Complexes, Isolated PEF Proteins, and Methods for Purifying and  
Identifying Them

<130> 10070431-07-US

<140> 09631613

<141> 2000-08-04

<150> US 08/957,709

<151> 1997-10-24

<150> US 08/822,774

<151> 1997-03-21

<160> 89

<170> PatentIn version 3.4

<210> 1

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial Peptide Sequence

<220>

<221> misc\_feature

<222> (1)..(2)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (13)..(15)

<223> Xaa can be any naturally occurring amino acid

<400> 1

Xaa Xaa Leu His His Val Lys Leu Ile Tyr Ala Thr Xaa Xaa Xaa  
1 5 10 15

<210> 2

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial amino acid sequence

<220>  
<221> misc\_feature  
<222> (1)..(3)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (7)..(8)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (10)..(10)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (14)..(15)  
<223> Xaa can be any naturally occurring amino acid

<400> 2

Xaa Xaa Xaa Pro Asp Trp Xaa Xaa Arg Xaa Glu Xaa Leu Xaa Xaa  
1 5 10 15

<210> 3  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial peptide sequence

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (14)..(14)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (16)..(16)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (21)..(21)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (29)..(30)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (32)..(35)  
<223> Xaa can be any naturally occurring amino acid

<400> 3

Xaa Leu Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Xaa Arg Xaa  
1 5 10 15

Leu Val Gly Lys Xaa Ile Val Leu Ala Ile Pro Gly Xaa Xaa Ala Xaa  
20 25 30

Xaa Xaa Xaa  
35

<210> 4  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial peptide sequence

<220>  
<221> misc\_feature  
<222> (1)..(3)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (7)..(8)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (10)..(10)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (14)..(14)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (16)..(18)  
<223> Xaa can be any naturally occurring amino acid

<400> 4

Xaa Xaa Xaa Pro Asp Trp Xaa Xaa Arg Xaa Glu Xaa Leu Xaa Glu Xaa  
1 5 10 15

Xaa Xaa

<210> 5  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial peptide sequence

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Xaa can be any naturally occurring amino acid

<400> 5

Xaa Trp Asp Ala Val Ile Met Ala Ala Ala Val Val Asp Phe Arg Pro  
1 5 10 15

Lys

<210> 6  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial peptide sequence

<400> 6

Ala Asp Leu Val Val Gly Asn Thr Leu Glu Ala Phe Gly Ser Glu Glu  
1 5 10 15



Asn Gln Val Val Leu Ile Gly Arg  
20

<210> 7  
<211> 17  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Artificial peptide sequence

<220>  
<221> misc\_feature  
<222> (13)..(13)  
<223> Xaa can be any naturally occurring amino acid

<400> 7

Gly Ala Met Leu His His Val Lys Leu Ile Tyr Ala Xaa Lys Leu Arg  
1 5 10 15

Lys

<210> 8  
<211> 18  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> Artificial peptide sequence

<220>  
<221> misc\_feature  
<222> (15)..(16)  
<223> Xaa can be any naturally occurring amino acid

<400> 8

Gly Ala Met Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Xaa Xaa  
1 5 10 15

Arg Lys

<210> 9  
<211> 13  
<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial peptide sequence

<400> 9

Met Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Leu  
1 5 10

<210> 10

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial peptide sequence

<220>

<221> misc\_feature

<222> (2)..(4)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (8)..(9)

<223> Xaa can be any naturally occurring amino acid

<400> 10

Gly Xaa Xaa Xaa Pro Asp Trp Xaa Xaa Lys Phe Arg Lys Glu Glu Ser  
1 5 10 15

<210> 11

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial peptide sequence

<400> 11

Gly Ala Ile Leu Leu Pro Asp Trp Lys Ile Arg Lys Glu Ile Leu Ile  
1 5 10 15

Glu

<210> 12

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial peptide sequence

<220>

<221> misc\_feature

<222> (1)..(1)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (9)..(9)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (13)..(13)

<223> Xaa can be any naturally occurring amino acid

<400> 12

Xaa	Met	His	His	Val	Ile	Lys	Leu	Xaa	Tyr	Ala	Thr	Xaa	Ser	Arg	Lys
1				5					10					15	

<210> 13

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial peptide sequence

<400> 13

Met	Leu	Tyr	Leu	Val	Arg	Pro	Asp	Trp	Lys	Arg	Arg	Lys	Glu	Ile	Leu
1				5					10					15	

Ile Glu

<210> 14

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<400> 14

caycaygaha arythattta cgc

<210> 15  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence  
  
 <220>  
 <221> misc\_feature  
 <222> (9)..(9)  
 <223> n is a, c, g, or t  
  
 <400> 15  
 gccatdatna edgertcgta ttt 23

<210> 16  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence  
  
 <400> 16  
 caycaygaha arythatata cgc 23

<210> 17  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence  
  
 <400> 17  
 ardacdacyt grttttcttc 20

<210> 18  
 <211> 1209  
 <212> DNA  
 <213> Pyrococcus furiosus

<220>  
 <221> misc\_feature  
 <222> (67)..(75)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (930)..(933)  
 <223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (1203)..(1203)

<223> n is a, c, g, or t

<400> 18

```
atgcttcacc acgtcaagct aatctacgcc acaaaaagtc gaaagctagt tggaaaaaag      60
atagtcnnnn nnnnnccagg gagtattgcg gctttggatg tgaaagcttg tgagggacta     120
attaggcatg gggccgaagt tcatgcagtg atgagtgagg cagccacca gataattcat     180
ccttatgcat ggaatttgcc cacgggaaat ccagtcataa ctgagatcac tggatttatc     240
gagcatgttg agttagcagg ggaacatgag aataaagcag atttaatttt ggtttgcct      300
gccactgcc aacacaattag taagattgca tgtggaatag atgatactcc agtaactaca     360
gtcgtgacca cagcatttcc ccacattcca attatgatag cccagcaat gcatgagaca     420
atgtacaggc atcccatagt aaggggagaac attgaaaggt taaagaagct tggcgttgag     480
tttataggac caagaattga ggagggaaaag gcaaaaagttg caagcattga tgaaatagtt     540
tacagagtta ttaaaaacgt ccacaaaaaa acattggaag ggaagagagt cctagtaacg     600
gcgggagcaa caagagagta catagatcca ataagattca taacaaatgc cagcagtgga     660
aaaatgggag tagcgttggc tgaagaagca gatttttagag gagctgttac cctcataaga     720
acaaagggaa gtgtaaaggc ttttagaatc agaaaaatca aattgaaggt tgagacagtg     780
gaagaaatgc tttcagcgat tgaaaatgag ttgaggagta aaaagtatga cgtagttatt     840
atggcagctg ctgtaagcga ttttaggcc aaaaattaaag cagagggaaa aattaaaagc     900
ggaagatcaa taacgataga gctcgttcn nnaatccca aaatcattga tagaataaag     960
gaaattcaac caaatgtctt tcttggttga tttaaagcag aaacttcaa agaaaagctt    1020
atagaagaag gtaaaaggca gattgagagg gccaaaggctg acttagtcgt tggtaacaca    1080
ttggaagcct ttggaagcga ggaaaaccaa gtagtattaa ttggcagaga tttcacaaaa    1140
gaacttcaa aaatgaaaaa gagagagtta gcagagagaa tttgggatga gatagagaaa    1200
ttnctgtcc                                     1209
```

<210> 19

<211> 403

<212> PRT

<213> Pyrococcus furiosus

<220>

<221> misc\_feature  
<222> (23)..(25)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (311)..(311)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (401)..(401)  
<223> Xaa can be any naturally occurring amino acid

<400> 19

Met Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Ser Arg Lys Leu  
1 5 10 15

Val Gly Lys Lys Ile Val Xaa Xaa Xaa Pro Gly Ser Ile Ala Ala Leu  
20 25 30

Asp Val Lys Ala Cys Glu Gly Leu Ile Arg His Gly Ala Glu Val His  
35 40 45

Ala Val Met Ser Glu Ala Ala Thr Lys Ile Ile His Pro Tyr Ala Trp  
50 55 60

Asn Leu Pro Thr Gly Asn Pro Val Ile Thr Glu Ile Thr Gly Phe Ile  
65 70 75 80

Glu His Val Glu Leu Ala Gly Glu His Glu Asn Lys Ala Asp Leu Ile  
85 90 95

Leu Val Cys Pro Ala Thr Ala Asn Thr Ile Ser Lys Ile Ala Cys Gly  
100 105 110

Ile Asp Asp Thr Pro Val Thr Thr Val Val Thr Thr Ala Phe Pro His  
115 120 125

Ile Pro Ile Met Ile Ala Pro Ala Met His Glu Thr Met Tyr Arg His  
130 135 140

Pro Ile Val Arg Glu Asn Ile Glu Arg Leu Lys Lys Leu Gly Val Glu  
145 150 155 160

Phe Ile Gly Pro Arg Ile Glu Glu Gly Arg Ala Lys Val Ala Ser Ile

165	170	175
Asp Glu Ile Val Tyr Arg Val Ile Lys Lys Leu His Lys Lys Thr Leu		
180	185	190
Glu Gly Lys Arg Val Leu Val Thr Ala Gly Ala Thr Arg Glu Tyr Ile		
195	200	205
Asp Pro Ile Arg Phe Ile Thr Asn Ala Ser Ser Gly Lys Met Gly Val		
210	215	220
Ala Leu Ala Glu Glu Ala Asp Phe Arg Gly Ala Val Thr Leu Ile Arg		
225	230	235 240
Thr Lys Gly Ser Val Lys Ala Phe Arg Ile Arg Lys Ile Lys Leu Lys		
245	250	255
Val Glu Thr Val Glu Glu Met Leu Ser Ala Ile Glu Asn Glu Leu Arg		
260	265	270
Ser Lys Lys Tyr Asp Val Val Ile Met Ala Ala Ala Val Ser Asp Phe		
275	280	285
Arg Pro Lys Ile Lys Ala Glu Gly Lys Ile Lys Ser Gly Arg Ser Ile		
290	295	300
Thr Ile Glu Leu Val Pro Xaa Asn Pro Lys Ile Ile Asp Arg Ile Lys		
305	310	315 320
Glu Ile Gln Pro Asn Val Phe Leu Val Gly Phe Lys Ala Glu Thr Ser		
325	330	335
Lys Glu Lys Leu Ile Glu Glu Gly Lys Arg Gln Ile Glu Arg Ala Lys		
340	345	350
Ala Asp Leu Val Val Gly Asn Thr Leu Glu Ala Phe Gly Ser Glu Glu		
355	360	365
Asn Gln Val Val Leu Ile Gly Arg Asp Phe Thr Lys Glu Leu Pro Lys		
370	375	380
Met Lys Lys Arg Glu Leu Ala Glu Arg Ile Trp Asp Glu Ile Glu Lys		
385	390	395 400

Xaa Leu Ser

<210> 20

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<400> 20

catagcgaat tcgcaaaacc tttcgcggta tgg 33

<210> 21

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<400> 21

actacggaat tccacggaaa atgccgctca tcc 33

<210> 22

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<400> 22

ggcgtttccg ttctttcttcg 20

<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<400> 23

ccatctcacg cgccagtttc 20

<210> 24

<211> 23

<212> DNA



<213>	Artificial Sequence	
<220>		
<223>	Artificial nucleic acid sequence	
<400>	24	
	gaggagagca ggaaaggtgg aac	23
<210>	25	
<211>	21	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Artificial nucleic acid sequence	
<400>	25	
	gctgggagaa gacttcactg g	21
<210>	26	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Artificial nucleic acid sequence	
<400>	26	
	gagcttgctc aactttatc	19
<210>	27	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Artificial nucleic acid sequence	
<400>	27	
	gatagagata gtttctggag acg	23
<210>	28	
<211>	23	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Artificial nucleic acid sequence	
<400>	28	
	cgggatatcg acatttctgc acc	23

<210> 29  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence  
  
 <400> 29  
 gagttaaatg cctacactgt atct 24

<210> 30  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence  
  
 <400> 30  
 caggactcag aagctgctat cgaa 24

<210> 31  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence  
  
 <400> 31  
 ctgcacgtgc cctgtaggat ttgt 24

<210> 32  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Artificial nucleic acid sequence

<220>  
 <221> misc\_feature  
 <222> (15)..(15)  
 <223> n is a, c, g, or t  
  
 <400> 32  
 ccagaytgga arwknaggaa aga 23

<210> 33  
 <211> 23  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<220>

<221> misc\_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<400> 33

ccagaytgga arwknagaaa aga

23

<210> 34

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<220>

<221> misc\_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<400> 34

ccagaytgga arwknaggaa gga

23

<210> 35

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<220>

<221> misc\_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<400> 35

ccagaytgga arwknagaaa gga

23

<210> 36

<211> 84

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial nucleic acid sequence

<220>

<221> misc\_feature

<222> (20)..(20)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (66)..(66)

<223> n is a, c, g, or t

<400> 36

cagagtgggc agagaggctn ttgttaaggg gaaattaatc gacgtggaaa aggaaggaaa 60

agtcgntatt cctccaaggg aata 84

<210> 37

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial amino acid sequence

<220>

<221> misc\_feature

<222> (12)..(12)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (22)..(22)

<223> Xaa can be any naturally occurring amino acid

<400> 37

Glu Trp Ala Glu Arg Le